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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,282	02/19/2002	Mark W. Miles	01568-006004	4213

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EXAMINER
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LESTER, EVELYN A

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/078,282

Applicant(s)

MILES, MARK W.

Examiner

Evelyn A. Lester

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10, 11 and 40-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10, 11, 40 and 46 is/are rejected.
- 7) ☒ Claim(s) 41-45 and 47-51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. The Applicant's request for Continued Examination (i.e. RCE) filed on 3-3-03 was improper and disrupted the entering of the amendment in a timely fashion. The Examiner apologizes for any inconvenience this may have caused.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 3-3-03 was filed after the mailing date of the first action on 11-28-02. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

### ***Claim Objections***

3. Claim 46 is objected to because of the following informalities: At line 4, the word "form" should be corrected to read ----from----. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 44 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 44 recites the limitation "the film" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested that the dependency of claim 44 be changed from "claim 42" to ---claim 43---, which would provide the proper antecedent basis.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 10 and 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Jannson et al (U.S. Patent 5,293,272).

Jannson et al is interpreted as disclosing the claimed invention of a structure for modulating light having modulators of light (note for example at col. 5, lines 16-20) each including an interference cavity (note for example at col. 7, lines 3-8 and at col. 12, line 48, which states that the spacer is "free space" or in other words a cavity) for causing interference modulation of the light, and an optical compensation mechanism, such as holographically patterned material (note for example in Figure 13, holograms 1 and 2,

as well as matching layers), coupled to the modulators which enhances the optical performance of the structure.

Please also note in column 1, line 12 to column 3 line 58, with especially noting at column 1, lines 12-29.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 40 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jannson et al (U.S. Patent 5,293,272) in view of Ambrose et al (U.S. patent 2,534,846).

Jannson et al is interpreted as disclosing the claimed invention of a device for modulating light having an array of interference modulators of light (note for example at col. 5, lines 16-20 and especially noting Figure 24 and its accompanying text) each including an interference cavity for causing interference modulation of the light, and an optical compensation mechanism, such as holographically patterned material (note for example in Figure 13, holograms 1 and 2, as well as matching layers), coupled to the modulators which enhances the optical performance of the structure. Further, please also note in column 1, line 12 to column 3 line 58, with especially noting at column 1,

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lines 12-29. However, though Jannson et al teaches at column 1, lines 24-29, that the crucial parameters of a Fabry-Perot etalon include the optical path length defining multi-reflection phase relation of optical beams reflected numerous times between the two mirrors, Jannson et al appears to be silent as to color changes in light by the device. Ambrose et al explicitly teach that it has long been known that light transmitted by an interference cavity varies in color according to the distance apart of the two surfaces (col. 1, lines 3-8). Therefore, in view of Ambrose et al's teaching, it would have been obvious that a change in distance between the surfaces of Jannson et al's invention produces the claimed limitation of a change in color through varying the distance between the reflective surfaces.

***Allowable Subject Matter***

7. Claims 41-45 and 47-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art fails to teach or fairly suggest the claimed subject matter of a device for modulating light and its method of fabrication, having the combination of claimed elements and claimed limitations, including as recited in claims 41 and 47, wherein the optical compensation mechanism comprises a film which includes arbitrary patterns of

refractive indices; as recited in claims 42 and 48, the optical compensation mechanism has an array of photonic crystals; as recited in claims 43 and 49, the optical compensation mechanism comprises a film having a plurality of microscopic plates; and as recited in claims 45 and 51, the optical compensation mechanism has a plurality of microlenses to magnify an active area of the interference modulators in the array.

### ***Response to Arguments***

9. Applicant's arguments, with regards to claims 10 and 11, filed 3-3-03, have been fully considered but they are not persuasive.

The Applicant argues that Jannson et al does not disclose the etalon including a cavity. The Examiner disagrees with this argument because it is well known in the art that a Fabry-Perot etalon incorporates a "cavity" by the very nature that the light reflects through an area in order to produce the desired effects and/or output. Please note from the *Handbook of Optics, Volume I, Fundamentals, Techniques, and Design*, on page 2.34, under the heading of Fabry-Perot Interferometer, six lines down, that "Fabry-Perot etalon" is synonymous with "cavity."

10. Applicant's arguments with respect to claims 40-51 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evelyn A. Lester whose telephone number is (571) 272-2332. The examiner can normally be reached on M- F, from about 10 am to 7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Evelyn A. Lester  
Primary Examiner  
Art Unit 2873